



2822

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Nobuaki HASHIMOTO

Group Art Unit: 2822

Application No.: 09/673,479

Examiner: D.Graybill

Filed: October 16, 2000

Docket No.: 107280

For: BINDER, SEMICONDUCTOR DEVICE AND METHOD OF MANUFACTURING
THE SAME, CIRCUIT BOARD, AND ELECTRONIC EQUIPMENT

SUPPLEMENTAL SUMMARY OF SUBSTANCE OF INTERVIEW

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In reply to the July 1, 2005 Patent Office Communication, Applicant respectfully submits the following comments and supplemental summary of the substance of the personal interview conducted with Examiner Graybill on February 11, 2005.

The July 1 Patent Office communication asserts specifically that Applicant's April 15 Amendment did not make of record the detailed inputs presented by Applicant's representative during the personal interview or the response by the Examiner that the Applicant characterized as lacking feedback. In reply, the following is a more thorough discussion of these items.

During the personal interview conducted with Examiner Graybill on February 11, Applicant's representative began by addressing the objections to the drawings outlined in the January 27, 2005 Office Action. Specifically, Applicant's representative noted for the Examiner Applicant's belief that the figures comply with all Patent Office requirements,

particularly in light of the fact that the figures in question had been once amended at the Examiner's insistence. The Applicant's representative specifically noted Applicant believed that the features of claims 29, 33, 34, 39 and 40 were adequately depicted in the figures, as previously amended. Examiner Graybill's response generally indicated that he was unpersuaded by this argument, but he did not offer any specific rebuttal. Examiner Graybill did, however, invite arguments over the objections of the drawings by asserting that Applicant could "argue that in your formal response."

Applicant's representative continued the personal interview by discussing the rejections of claims 30, 32-35 and 38-42 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Specifically, the Office Action states that the undescribed subject matter includes the embodiments comprising the claim 15 limitation of a coefficient of thermal expansion of the first layer being smaller than a coefficient of thermal expansion of the second layer in combination with the limitations of claims 30 and 32-35, and the undescribed subject matter also includes the embodiments comprising claim 36 limitation wherein a modulus of elasticity of the second layer is smaller than the modulus of elasticity of the first layer in combination with the limitations of claims 38-42. Applicant's representative explained in a detailed manner how each claim is supported by the written description by attempting to specifically point to those portions of the written description which included each of the elements as recited in the claims. The Examiner expressed his own belief that the elements may not be technically combinable in the manner disclosed. Applicant's representative noted that such an assertion, even if true, did not render the claims rejectable under 35 U.S.C. §112 because the claim language was, in fact, supported by the written description in the disclosure. Examiner Graybill remained unpersuaded by Applicant's arguments in this regard, but again did not offer any specific rebuttal in this

regard other than that noted above, and stated simply that Applicant could "make the arguments in your formal response."

Applicant's representative then continued the personal interview by traversing the prior art rejections of all the pending claims over combinations of U.S. Patents Nos. 5,120,665 to Tsukagoshi, 6,049,038 to Suzuki, 6,344,696 to Nakamura, and 6,333,206 to Ito. Applicant's representative addressed each of the prior art rejections as they were enumerated in the Office Action and asserted that the claims would not have been obvious because there would have been no motivation to combine the references in the manner suggested by the Office Action. The specific points discussed regarding the prior art rejections are set forth below. The Examiner did not rebut any of these points and did not respond to them other than to indicate once again that Applicant could certainly include these arguments in the formal response when filed.

The Office Action, on page 5, rejects claims 15, 16, 20, 29-42 and 45 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patents Nos. 5,120,665 to Tsukagoshi et al. (hereinafter "Tsukagoshi") and 6,049,038 to Suzuki. The Office Action, on page 7, rejects claims 19 and 44 under 35 U.S.C. §103(a) as being unpatentable over Tsukagoshi and Suzuki as applied to claims 15 and 36, and further in combination with U.S. Patent 6,344,696 to Nakamura et al. (hereinafter "Nakamura"). The Office Action, on page 9, rejects claim 43 under 35 U.S.C. §103(a) as being unpatentable over Tsukagoshi and Suzuki as applied to claim 36, and further in combination with U.S. Patent 6,333,206 to Ito et al. (hereinafter "Ito"). These rejections are respectfully traversed.

Tsukagoshi discloses a composition comprising epoxy resin type adhesive, particles obtained by coating a nucleus of a curing agent with a film, pressure-deformable electroconductive particles having an average particle size larger than that of the particles, and, if necessary, rigid particles, along with a method of using the composition to connect a

semiconductor chip to a wiring substrate (Abstract). The Office Action, on page 6, admits that Tsukagoshi does not explicitly disclose all of the combination of features recited in at least independent claims 15 and 36. The Office Action, on the other hand, looks to Suzuki as filling in for the shortfall of Tsukagoshi in order to find a coefficient of thermal expansion of the "first resin" being smaller than the coefficient of thermal expansion of the "second resin." The Office Action asserts that it would have been obvious to combine the product of Suzuki with the product of Tsukagoshi "because it would improve the product reliability."

First, Suzuki only appears to disclose, with respect to coefficients of thermal expansion resin with different layers having different thermal expansion rates (col. 6, lines 7-24). Thus, if anything, one of ordinary skill would have used Suzuki's single layer to obtain the effect thereof taught by Suzuki. The resulting structure therefore would not have two resins, as recited in the claims.

Second, the Office Action provides no reference to any specific teaching or suggestion in either of the applied prior art references that it would have been obvious to one of ordinary skill in the art to modify Tsukagoshi with the teachings of Suzuki to obtain a product such as is recited in the claims. Applicant respectfully submits that such a feature would not have been obvious to one of ordinary skill in the art.

MPEP §2143.01 instructs that "[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination" (emphasis added). MPEP §2143.01 further instructs that "[a]lthough a prior art device 'may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so'" (emphasis added). *See also in re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Applicant respectfully submits that the rejection of at least independent claims 15 and 36 is improper in view of MPEP §2144.03 because in stating the rejection the Office Action lacks the required

specific evidence of a teaching, suggestion or motivation to one of ordinary skill to combine the references.

Applicant believes that such a combination of references can only be arrived at through the improper application of hindsight reasoning in view of Applicant's specification as a roadmap for such an analysis.

Further, the Office Action, on page 7, asserts that U.S. Patent No. 5,959,363 to Yamada et al. (hereinafter "Yamada") at col. 3, lines 54-63, evidences the proposition that "filler-induced coefficient of thermal expansion and modulus of elasticity of a resin are inherently indirectly correlated." Yamada states "The coefficient of thermal expansion and elastic modulus of a resin changes with a change in content of a filler ... as the content of a filler is increased, the coefficient of thermal expansion of a resin decreases, but the elastic modulus thereof increases on the contrary" (col. 3, lines 58-63). Applicant respectfully submits that such an assertion does not make the applied references any more combinable as it does not address the deficiencies noted above.

For at least the above reasons, Applicant respectfully submits that at least claims 15 and 36 would not have been rendered obvious by the combination of Tsukagoshi and of Suzuki. Further, claims 16, 20, 29-35, 37-42 and 45 also would not have been rendered obvious by the combination of the applied references for at least the respective dependence of these claims on independent claims 15 and 36, as well as for the separately patentable subject matter which each of these recites. Finally, regarding claims 19, 43 and 44, Nakamura and Ito do not overcome the shortfalls in the application of Tsukagoshi and Suzuki to at least independent claims 15 and 36. As such, the subject matter of claims 19, 43 and 44 would not have been rendered obvious by the combinations of the applied references for at least the respective dependence of these claims on independent claims 15 and 36, as well as for the separately patentable subject matter which each of these claims recites.

To expedite prosecution, Applicant renews the request asserted on pages 10 and 11 of the April 15 Amendment that, should the Examiner choose to maintain any of (1) the objection to the drawings; (2) the rejection of the enumerated claims under 35 U.S.C. §112, first paragraph; or (3) any of the prior art rejections of the Office Action, Applicant's representative be granted a personal interview with Examiner Graybill and the Supervisory Patent Examiner under the guidance provided in MPEP §707.02.

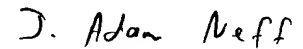
Applicant respectfully submits that this Supplemental Summary is a full and complete supplement to the April 15 Amendment and is fully responsive to the July 1 Patent Office Communication. Consideration of all of the points raised in the April 15 Amendment and in this Supplemental Summary is respectfully requested. Should any further questions arise regarding the April 15 Amendment or this Supplemental Summary, all inquiries may be directed to Applicant's undersigned representative at the telephone number set forth below.

Respectfully submitted,



James A. Oliff
Registration No. 27,075

Daniel A. Tanner, III
Registration No. 54,734


Reg. No. 41,218

JAO:DAT

Date: July 22, 2005

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

<p>DEPOSIT ACCOUNT USE AUTHORIZATION Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461</p>
